Hit List

Search Results - Record(s) 1 through 50 of 52 returned.

☐ 1. Document ID: US 20030202196 A1

Using default format because multiple data bases are involved.

L2: Entry 1 of 52   File: PGPB   Oct 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030202196
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030202196 A1

TITLE: Information processing apparatus, information processing system, information output control method, storage medium and program

PUBLICATION-DATE: October 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ooki, Jouji	Kanagawa		JP	

US-CL-CURRENT: 358/1.9

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

---

☐ 2. Document ID: US 20030063302 A1

L2: Entry 2 of 52   File: PGPB   Apr 3, 2003

DOCUMENT-IDENTIFIER: US 20030063302 A1
TITLE: Testing means and process for controlling offset and digital printing

Current US Classification, US Primary Class/Subclass:
358/1.9

Summary of Invention Paragraph:
[0014] To determine color densities and color locations in the case of the overprinting of a plurality of colors, the test target according to the present invention (dot pattern) can be complemented with a supplementary test target (trapping pattern). The supplementary target preferably has the same size and shape as the test target based on the dot pattern. Depending on the sequence of colors, the supplementary test target may contain the following color fields in multicolor printing: C/M, C/Y, M/Y and C/M/Y (C=cyan, M=magenta, Y=yellow). The trapping pattern may be placed either side to side to the dot pattern or also independently therefrom on the side of the printed copy.

h   e b   b g ee e f   e   b   ef   h   e

Detail Description Paragraph:
[0043] A supplementary test target was developed especially for densitometry and colorimetry. This test target preferably has the same size and shape as the target based on a dot pattern. In the case of four-color printing, it is divided into four quadrants, which contain color fields printed one over another. In the case of four-color printing, these are, e.g., C/M, C/Y, M/Y and C/M/Y, depending on the sequence of the colors. The target may be placed side to side to the target based on a dot pattern or also independently therefrom. It is used especially to determine the color densities in overprinting and the ink uptake. A process described in (Kunzli, 2000) is used for this.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 3.   Document ID: US 20030007166 A1

L2: Entry 3 of 52   File: PGPB   Jan 9, 2003

DOCUMENT-IDENTIFIER: US 20030007166 A1
TITLE: Image correction method and image correcting apparatus

Current US Classification, US Primary Class/Subclass:
358/1.9

Summary of Invention Paragraph:
[0018] In accordance with the image correcting method and apparatus of the present invention, plural windows of different shapes are used to share the function of recognizing a dot pattern so that various patterns can be efficiently distinguished using a small-size circuit. For example, by selecting windows such that one of the windows is a conventional small square window and other windows are vertically, horizontally and obliquely elongated windows, respectively, the pattern can be distinguished using the small square window and the line width can be distinguished using the elongated windows, and these results can be synthesized to distinguish the dot pattern. In this way, each of the windows can be made small and, even after combining them all, the overall size of the circuit can be made small, The elongated windows may be combined into one window spreading radially from an observation dot.

Detail Description Paragraph:
[0059] As has been described in the foregoing, according to the present invention, a dot pattern is detected using windows of different shapes, and the detection results are separately processed and then synthesized so that various patterns can be accurately distinguished using small windows and precise correction can be performed without increasing the size of the circuit. More specifically, pattern information can be acquired by one pattern coincidence detection circuit and line width information can be acquired by the other pattern coincidence detection circuit so that accurate correction may be made to various lines so as to improve the image quality.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

---

h   e b   b g ee e f   e   b   ef   b   e

□ 4.   Document ID: US 20020097409 A1

L2: Entry 4 of 52   File: PGPB   Jul 25, 2002

DOCUMENT-IDENTIFIER: US 20020097409 A1
TITLE: Method for recording a digital image and information pertaining to such
image on an oriented polymer medium

Current US Classification, US Primary Class/Subclass:
358/1.9

Detail Description Paragraph:
[0078] The void-initiating material may be selected from a variety of materials and
should be present in an amount of about 5 to 50% by weight based on the weight of
the core matrix polymer. Preferably, the void-initiating material comprises a
polymeric material. When a polymeric material is used, it may be a polymer that can
be melt-mixed with the polymer from which the core matrix is made and be able to
form dispersed spherical particles as the suspension is cooled down. Examples of
this would include nylon dispersed in polypropylene, polybutylene terephthalate in
polypropylene, or polypropylene dispersed in polyethylene terephthalate. If the
polymer is preshaped and blended into the matrix polymer, the important
characteristic is the size and shape of the particles. Spheres are preferred and
they can be hollow or solid. These spheres may be made from cross-linked polymers
which are members selected from the group consisting of an alkenyl aromatic
compound having the general formula Ar--C(R).dbd.CH.sub.2, wherein Ar represents an
aromatic hydrocarbon radical, or an aromatic halohydrocarbon radical of the benzene
series and R is hydrogen or the methyl radical; acrylate-type monomers include
monomers of the formula CH.sub.2.dbd.C(R')--C(O)(OR) wherein R is selected from the
group consisting of hydrogen and an alkyl radical containing from about 1 to 12
carbon atoms and R' is selected from the group consisting of hydrogen and methyl;
copolymers of vinyl chloride and vinylidene chloride, acrylonitrile and vinyl
chloride, vinyl bromide, vinyl esters having formula CH.sub.2.dbd.CH(O)COR, wherein
R is an alkyl radical containing from 2 to 18 carbon atoms; acrylic acid,
methacrylic acid, itaconic acid, citraconic acid, maleic acid, fumaric acid, oleic
acid, vinylbenzoic acid; the synthetic polyester resins which are prepared by
reacting terephthalic acid and dialkyl terephthalics or ester-forming derivatives
thereof, with a glycol of the series HO(CH.sub.2).sub.nOH wherein n is a whole
number within the range of 2-10 and having reactive olefinic linkages within the
polymer molecule, the above-described polyesters which include copolymerized
therein up to 20 percent by weight of a second acid or ester thereof having
reactive olefinic unsaturation and mixtures thereof, and a cross-linking agent
selected from the group consisting of divinylbenzene, diethylene glycol
dimethacrylate, diallyl fumarate, diallyl phthalate, and mixtures thereof.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

□ 5.   Document ID: US 20010019416 A1

L2: Entry 5 of 52   File: PGPB   Sep 6, 2001

DOCUMENT-IDENTIFIER: US 20010019416 A1
TITLE: Specifying image file processing operations via device controls and a user-
completed proof sheet

h   e b   b g ee e f   e   b   ef   b   e

Current US Classification, US Primary Class/Subclass:
358/1.9

Detail Description Paragraph:
[0061] The patterns in each identity marker 60' can be arranged linearly, as
illustrated by way of example in FIG. 9B; in a matrix, as illustrated by way of
example in FIG. 9A; or in any other manner known to those skilled in the art. The
size and shape of the alphanumeric characters and the non-numeric patterns are
preferably chosen such that the identity marker 60' can be reliably located and
converted back into the correct data keys 128 by the scanner 46. Alternatively,
more than one identity marker, such as identity markers 60 and 62 of FIG. 3A, may
be employed. The multiple markers may be identical, in order to provide redundancy
in the event that a portion of the proof sheet 22 is damaged. The multiple markers
may alternatively be mirror images or rotations of each other, sometimes with a
certain portion marked differently so as to indicate whether or not the marker has
a normal orientation or a mirrored orientation.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 6. Document ID: US 20010017706 A1

L2: Entry 6 of 52   File: PGPB   Aug 30, 2001

DOCUMENT-IDENTIFIER: US 20010017706 A1
TITLE: Image data producing apparatus and image data producing program storage
medium

Current US Classification, US Primary Class/Subclass:
358/1.9

Summary of Invention Paragraph:
[0009] However, in general, the halftone dots image printed out by the proofer
1000' is different, as compared with the halftone dots image printed by the
printing system 2000, in a halftone dots pattern which is defined by elements such
as angle and interval in a halftone dots arrangement and shape and size of halftone
dots. Such a difference in the halftone dots pattern of an image brings about a
difference in Rosette pattern and moir pattern and thereby bringing about
impressions of the image in its entirety. Such a halftone dots pattern is
determined in accordance with an image data producing apparatus for producing image
data representative of a proof image. Thus, there is desired an image data
producing apparatus for producing image data representative of a proof image which
reproduces an image to be printed in a printing system and a halftone dots pattern
as well.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 7. Document ID: US 6519055 B1

L2: Entry 7 of 52   File: USPT   Feb 11, 2003

h   e b   b g ee e f   e   b   ef   h   e

DOCUMENT-IDENTIFIER: US 6519055 B1
TITLE: Two-dimensional linear interpolation and registration control for a
hyperacuity printer

Detailed Description Text (114):
The information stored in memory 190 of FIG. 27 must also be precalculated before
printing a page. In general, for each defined intensity 197 input to the memory, a
corresponding halftone dot must be defined and stored in memory planes 206 or 207,
for example. Once the shape and size of the halftone dot is defined with respect to
the size of the memory array, each dot needs to be scaled, thereby defining it in
the fastscan direction as number of SYSCLKs, and the slowscan direction as number
of levels. Finally, each halftone dot has to be rendered such that each memory
location defining the halftone dot is assigned a value corresponding to the
intensity of the signal being written by the laser diode.

Current US Original Classification (1):
358/2.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☑ 8. Document ID: US 6505554 B1

L2: Entry 8 of 52   File: USPT   Jan 14, 2003

DOCUMENT-IDENTIFIER: US 6505554 B1
TITLE: Screen printing process with diminished moire effect

Brief Summary Text (7):
It is understood that Moire effects are introduced by the application of the dot
pattern to the screen which causes the dot shapes to be resized by the screen
structure, depending on the size of the dot and the screen cell. The interference
between the screen structure pattern and the dot pattern will be repeated for each
color and results in Moire effects.

Current US Cross Reference Classification (4):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 9. Document ID: US 6433891 B1

L2: Entry 9 of 52   File: USPT   Aug 13, 2002

DOCUMENT-IDENTIFIER: US 6433891 B1
TITLE: Stochastic screening method with dot pattern regularity control and dot
growth

h   e b   b g e e e f   e   b   ef   b   e

Detailed Description Text (4):
The present invention provides a method of rendering a halftone image by utilizing a pixel-by-pixel comparison of an image against a stochastic dither matrix. The halftone rendering process includes printing dot patterns on a recording medium wherein the dot patterns are represented by the dither matrix. The present invention advantageously provides a stochastic dither matrix (mask) wherein randomness or regularity can be easily selected because the variation of a pattern in the dither matrix can be precisely controlled from a regular structure to a random structure. This feature is absent in conventional approaches. In particular, the present invention permits the variation of dot patterns from regular patterns to blue noise patterns. The method in accordance with the invention integrally modulates the dot number (frequency), dot size (amplitude) and dot shape at each gray level during the generation of the dither matrix. The halftone patterns that are generated therefore have a visually pleasing blue noise attribute. Thus, the invention will permit the production of a "crispy" image that is free from a moire pattern. Furthermore, the screening method in accordance with the present invention provides flexible solutions to the different types of printing processes.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   10.   Document ID: US 6330077 B1

L2: Entry 10 of 52   File: USPT   Dec 11, 2001

DOCUMENT-IDENTIFIER: US 6330077 B1
TITLE: Image forming apparatus

Brief Summary Text (14):
With the present invention, when a matching dot pattern is not detected, each dot diameter based on the inputted dot image data is corrected to the default size, and the corrected dot image data is selected and outputted, so that any input dot image having no specified dot pattern can even be subjected to a minimum default correction, and with this feature, it is possible to improve image quality of an outside shape even in any of input dot images.

Brief Summary Text (18):
With the present invention, when corresponding dot pattern is not detected, dot diameter based on inputted dot image data is corrected to the default size, and the corrected dot image data is selected and outputted, so that any input dot image having a dot pattern not required to be subjected to smoothing processing or emphasizing processing can even be subjected to minimum default correction, and with this feature, it is possible to improve the image quality of an outside shape even in any of input dot images.

Detailed Description Text (72):
With the present invention, when a matching dot pattern is not detected, each dot diameter based on the inputted dot image data is corrected to the default size, and the corrected dot image data is selected and outputted, so that any input dot image having no specified dot pattern can even be subjected to a minimum default correction, and with this feature, it is possible to obtain an image forming apparatus which can improve image quality of an outside shape even in any of input dot images.

h   e b   b g ee e f   e   b   ef   h   e

Detailed Description Text (76):
With the present invention, when a corresponding dot <u>pattern</u> is not detected, dot
diameter based on inputted dot image data is corrected to the default <u>size,</u> and the
corrected dot image data is selected and outputted, so that any input dot image
having a dot <u>pattern</u> not required to be subjected to smoothing processing and
emphasizing processing can even be subjected to minimum default correction, and
with this feature, it is possible to obtain an image forming apparatus which can
improve the image quality of an outside <u>shape</u> even in any of input dot images.

<u>Current US Original Classification</u> (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

    ☐ 11. Document ID: US 6304340 B1

L2: Entry 11 of 52   File: USPT   Oct 16, 2001

DOCUMENT-IDENTIFIER: US 6304340 B1
TITLE: Composite halftone screens with stochastically distributed clusters or lines

<u>Brief Summary Text</u> (31):
A sixth aspect of the present invention is a printing system suitable for forming
marks on a substrate at one of c possible levels of colorant, and receiving image
signals represented at d possible levels, where d>c, and having a halftone
processor to reduce the number of levels at which the image is represented from d
levels to c levels in order to replicate gray level printing. The printing system
includes a memory, storing a set of halftone threshold level signals, each
threshold signal corresponding to a unique location in a halftone cell and a
comparator, receiving said image signal and one of the halftone threshold signals
from the memory, and producing an output signal at one of c possible levels,
varying according to the comparison of the halftone threshold signal to the image
signal to cause marking at a selected location on a substrate. The set of halftone
threshold level signals together form a line screen <u>matrix</u> arranged for use with
respect to the image to generate multiple line segments of printed spots within a
single repetition of the screen and generated by a stochastic line screen
optimization process which optimizes the screen by approximating a condition
wherein at any level of the input, all line segments have the same <u>shape</u> and the
same <u>size</u> and all adjacent line segments are equal-distance separated.

<u>Brief Summary Text</u> (32):
A seventh aspect of the present invention is a method of designing a halftone cell,
for converting an image received at d levels, for reproduction at two levels, said
cell having elements each corresponding to a pixel in a discrete area of an image.
The method chooses a desired line segment <u>pattern</u> for the halftone cell; assigns
threshold values to the halftone cell; generates halftone screens; calculates a
quality metric, by measuring divergence from the conditions wherein at any level of
the input, all line segments have the same <u>shape</u> and the same <u>size</u> and all adjacent
line segments are equaldistance separated; randomly chooses a limited set of
threshold values and swapping the threshold values; recalculates the quality metric
and determining whether the quality metric has improved; and determines whether to
keep the swap or returning the screen to its initial state based on the
determination of whether the quality metric has improved.

h   e b   b g ee e f   e   b   ef   b   e

Detailed Description Text (63):
According to the concepts of the present invention, the printing system includes
memory that stores a set of halftone threshold level signals, each threshold signal
corresponding to a unique location in a halftone cell. The printing system also
includes a comparator that receives the image signal and one of the halftone
threshold signals from the memory and produces an output signal at one of c
possible levels, varying according to the comparison of the halftone threshold
signal to the image signal to cause marking at a selected location on a substrate.
The set of halftone threshold level signals together forms a line screen matrix
arranged for use with respect to the image to generate multiple line segments of
printed spots within a single repetition of the screen and is generated by a
stochastic line screen optimization process which optimizes the screen by
approximating a condition wherein at any level of the input, all line segments have
the same shape and the same size and all adjacent line segments are equal-distance
separated.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 12.   Document ID: US 6275303 B1

L2: Entry 12 of 52   File: USPT   Aug 14, 2001

DOCUMENT-IDENTIFIER: US 6275303 B1
TITLE: Method and system for processing multi-level tone value images including
text, graphic images and continuous tone images by using halftoning technique

Detailed Description Text (19):
In FIG. 3H, the command number "7" is a command to change a dither pattern. The
value "DP" following this command number represents the number designating a
certain dither pattern. As described in detail later, a dither pattern is used in
the converting process wherein an intermediate image is converted into a binary
bitmap image. A plurality of dither patterns are prepared in the printer 120,
namely, for example, pre-stored in the ROM 22. The dither patterns are different
from each other in threshold values, size of matrix, a shape of pattern, the number
of screen line and the other properties. When the CPU 21 recognizes this command
number, the CPU 21 changes the current dither pattern to a different dither pattern
designated by the value "DP". Alternatively, one or more dither patterns may be
sent from the computer 110 to the printer 120, together with page description
language data.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 13.   Document ID: US 6256111 B1

L2: Entry 13 of 52   File: USPT   Jul 3, 2001

h   e b   b   g e e e f   e   b   ef   b   e

DOCUMENT-IDENTIFIER: US 6256111 B1
TITLE: Calibrating digital halftoning algorithms with multiple personalities

Detailed Description Text (12):
FIG. 2C is a diagram illustrating how dots are rendered using the threshold matrix.
Each PEL 202 is activated when the command to that PEL 202 exceeds a specified
threshold. As the grayscale command increases from pure white to black, individual
PELs will be activated, and as the desired image becomes darker and darker,
additional PELs are activated, thereby increasing the apparent size of the dot
rendered by the halftone cell 200. The selection of thresholds required to activate
each PEL in the threshold array determines the shape and size of the halftoning
dots. As illustrated in FIG. 2C, when a specific threshold value is exceeded, a
first PEL 204 is activated, rendering a small dot with the halftone cell. When a
larger grayscale command is received, the command exceeds the threshold value for
the second PEL 206, and the second PEL 206 is activated, thereby rendering a larger
dot within the halftone cell. Since the surrounding PELs have not been activated,
the result is one black dot in each halftone cell surrounded by white area from the
inactive PELs. When a number of the halftone cells are viewed from a distance they
collectively render the desired grayscale. Typically, the threshold values in the
halftone cell arc made up of equally spaced (incremented) values.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 14.   Document ID: US 6252679 B1
L2: Entry 14 of 52   File: USPT   Jun 26, 2001

DOCUMENT-IDENTIFIER: US 6252679 B1
TITLE: Composite halftone screens with stochastically distributed clusters or lines

Brief Summary Text (31):
A sixth aspect of the present invention is a printing system suitable for forming
marks on a substrate at one of c possible levels of colorant, and receiving image
signals represented at d possible levels, where d>c, and having a halftone
processor to reduce the number of levels at which the image is represented from d
levels to c levels in order to replicate gray level printing. The printing system
includes a memory, storing a set of halftone threshold level signals, each
threshold signal corresponding to a unique location in a halftone cell and a
comparator, receiving said image signal and one of the halftone threshold signals
from the memory, and producing an output signal at one of c possible levels,
varying according to the comparison of the halftone threshold signal to the image
signal to cause marking at a selected location on a substrate. The set of halftone
threshold level signals together form a line screen matrix arranged for use with
respect to the image to generate multiple line segments of printed spots within a
single repetition of the screen and generated by a stochastic line screen
optimization process which optimizes the screen by approximating a condition
wherein at any level of the input, all line segments have the same shape and the
same size and all adjacent line segments are equal-distance separated.

Brief Summary Text (32):

h   e b   b g ee e f   e   b   ef   b   e

A seventh aspect of the present invention is a method of designing a halftone cell, for converting an image received at d levels, for reproduction at two levels, said cell having elements each corresponding to a pixel in a discrete area of an image. The method chooses a desired line segment pattern for the halftone cell; assigns threshold values to the halftone cell; generates halftone screens; calculates a quality metric, by measuring divergence from the conditions wherein at any level of the input, all line segments have the same shape and the same size and all adjacent line segments are equal-distance separated; randomly chooses a limited set of threshold values and swapping the threshold values; recalculates the quality metric and determining whether the quality metric has improved; and determines whether to keep the swap or returning the screen to its initial state based on the determination of whether the quality metric has improved.
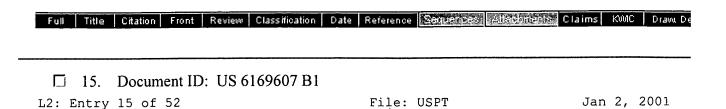
Detailed Description Text (56):
According to the concepts of the present invention, the printing system includes memory that stores a set of halftone threshold level signals, each threshold signal corresponding to a unique location in a halftone cell. The printing system also includes a comparator that receives the image signal and one of the halftone threshold signals from the memory and produces an output signal at one of c possible levels, varying according to the comparison of the halftone threshold signal to the image signal to cause marking at a selected location on a substrate. The set of halftone threshold level signals together forms a line screen matrix arranged for use with respect to the image to generate multiple line segments of printed spots within a single repetition of the screen and is generated by a stochastic line screen optimization process which optimizes the screen by approximating a condition wherein at any level of the input, all line segments have the same shape and the same size and all adjacent line segments are equal-distance separated.

Current US Original Classification (1):
358/1.9

CLAIMS:

10. A printing system suitable for forming marks on a substrate at one of c possible levels of colorant, and receiving image signals represented at d possible levels, where d>c, and having a halftone processor to reduce the number of levels at which the image is represented from d levels to c levels in order to replicate gray level printing, comprising:

a memory, storing a set of halftone threshold level signals, each threshold signal corresponding to a unique location in a halftone cell; and

a comparator, receiving said image signal and one of the halftone threshold signals from the memory, and producing an output signal at one of c possible levels, varying according to the comparison of said halftone threshold signal to said image signal to cause marking at a selected location on a substrate;

said set of halftone threshold level signals together forming a line screen matrix arranged for use with respect to the image to generate multiple line segments of printed spots within a single repetition of the screen and generated by a stochastic line screen optimization process which optimizes the screen by approximating a condition wherein at any level of the input, all line segments have the same shape and the same size and all adjacent line segments are equal-distance separated.

h   e b   b g ee e f   e   b   ef   b   e

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

□ 15. Document ID: US 6169607 B1

L2: Entry 15 of 52   File: USPT   Jan 2, 2001

DOCUMENT-IDENTIFIER: US 6169607 B1
TITLE: Printing black and white reproducible colored test documents

Detailed Description Text (7):
The method for printing black-and-white friendly colored text makes use of the character outline for all text sizes. The character outline is printed in color as a stroke of at least one hundredth of an inch in width. For small characters this finite line width tends to fill the character's interior and widen its boundaries. The effect is to increase the character's weight so that it looks bold. Note, however, for very small characters (on the order of the normal boundary line width), the line width must be reduced or the characters will be unreadable. As the character size increases, the interior space opens to reveal the outlined character. For still larger sizes, the interior is filled with light colors and/or patterns, but the character outline is still printed in a solid color to define the character's shape.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☑ 16. Document ID: US 6092732 A

L2: Entry 16 of 52   File: USPT   Jul 25, 2000

DOCUMENT-IDENTIFIER: US 6092732 A
TITLE: Selectively accented serpentine halftone patterns for embedding human readable information in images

Detailed Description Text (35):
Various sizes and shapes of human readable patterns have been constructed, and it has been found that the smaller ones usually are easier to read, because the field of view through a loupe or magnifying glass is often limited. Subjects given the images for the first time benefit from seeing as large an area as possible. Asking the subjects to spell out the individual letters as they see them is also helpful. When subjects are given images and a loupe and merely asked to find the hidden message in the background halftone, the problem usually encountered is that the subject does not know at what scale to look for the embedded words. However, if given a hint in the form of a blown-up image with a sample message that has been highlighted, the learning time is greatly reduced. Once the observer learns what to look for, the task of reading the data becomes easy.

Current US Original Classification (1):
358/3.28

h   e b   b g ee e f   e   b   ef   b   e

☑   17.   Document ID: US 6081345 A

L2: Entry 17 of 52   File: USPT   Jun 27, 2000

DOCUMENT-IDENTIFIER: US 6081345 A
TITLE: Line screen having extended dynamic tone range for embedding machine readable data in halftone images

Detailed Description Text (35):
Various sizes and shapes of human readable patterns have been constructed, and it has been found that the smaller ones usually are easier to read, because the field of view through a loupe or magnifying glass is often limited. Subjects given the images for the first time benefit from seeing as large an area as possible. Asking the subjects to spell out the individual letters as they see them is also helpful. When subjects are given images and a loupe and merely asked to find the hidden message in the background halftone, the problem usually encountered is that the subject does not know at what scale to look for the embedded words. However, if given a hint in the form of a blown-up image with a sample message that has been highlighted, the learning time is greatly reduced. Once the observer learns what to look for, the task of reading the data becomes easy.

Current US Original Classification (1):
358/3.28

☐   18.   Document ID: US 6072592 A

L2: Entry 18 of 52   File: USPT   Jun 6, 2000

DOCUMENT-IDENTIFIER: US 6072592 A
TITLE: Method and apparatus for preparing color screens in a halftone image

Detailed Description Text (20):
The fundamental operation is the application of a half toning pattern to a continuous tone original image to produce a binary (black or white) image in such a way that the visual effect approximates the continuous tone original image. An identical process is carried out for each primary color or black screen. This process revolves around the threshold matrix: a grid of number or grey levels that specifies the size and shape of each printed dot desired for various levels of grey in the image to be printed.

Detailed Description Text (24):
The process of creating a threshold matrix such as the one above comprises of two steps: (1) deciding the desired shape dots, and (2) how the shape should change at various dot sizes. This process will affect the overall look of the printed image,

h   e   b   b   g   ee   e f   e   b   ef   b   e

and the exact shape selected will determine various properties of the printed image, such as tone-jump and for multi-color printing, moire patterns.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 19. Document ID: US 6038039 A

L2: Entry 19 of 52   File: USPT   Mar 14, 2000

DOCUMENT-IDENTIFIER: US 6038039 A
TITLE: Character smoothing in scanners/printers

Brief Summary Text (19):
Specifically, when text is scanned using a CCD array, some of the information, such as in character stroke data, may be lost, which can cause the characters to have jagged edges, like stairs. Generally, the jagged edges have four different orientational angles, hereinafter referred to as corners. To smooth the jagged edges of the corners, the edge smooth software first searches for the corners, as well as the features of each corner, including its orientation, position and shape. The software then adds variable size fill-in patterns of pixels to smooth the jagged edges (hereinafter, jaggies) in each of the corners where the added pixel pattern is in accord with the orientation position and shape of the corner. The invention has been found to smooth jaggies in English, Chinese and Japanese character sets, as well as in line art, and can also smooth character edges, from any language, in bit map form. As used herein, "line art" is any color (i.e., black) and background (i.e., white) image except for text, such as but not limited to a drawing.

Detailed Description Text (22):
As is shown by FIG. 6, the software then adds variable size fill-in patterns of pixels proportional to the shape of each of corners 17, 18, 19 and 20 so as to enhance the corners or smooth their jagged edges, resulting in corresponding enhanced corners 17a, 18a, 19a and 20a. Specifically, 3 pixels were added to corner 17a, 6 pixels were added to corner 18a, 6 pixels were added to each corner 19a and 6 pixels were added to corner 20a. A comparison of corners 18a, 19a and 20a, to which the same number of pixels were added, shows that the pattern of fill-in pixels added to each corner varies depending upon the orientation and shape of each corner.

Detailed Description Text (25):
The software program shown in the microfiche appendix is limited to adding variable size fill-in patterns of pixels to corners having a lower-left orientation at three times magnification. All of the possible shapes of the corners having a lower-left orientation are predetermined and programmed for a particular magnification. The programmer also predetermines and programs the variable size fill-in pattern of pixels to be added to each corner shape. Accordingly, the edge smooth software program locates all of the predetermined corner shapes and adds the corresponding predetermined variable size fill-in patterns of pixels to each corner shape.

Detailed Description Text (26):
FIGS. 7-29 constitute all of the lower-left corner shapes for which the edge smooth software of the microfiche appendix is programmed to locate and add variable size

h   e b   b g ee e f   e   b   ef   b   e

fill-in patterns of pixels. If both legs of a corner are greater than or equal to 9 and the corner is not a "U" type corner, the program does not add pixels to the corner. FIGS. 7-29 also show the corresponding variable size fill-in patterns of pixels which are programmed to be added to each corner shape by the edge smooth software program.

Detailed Description Text (29):
FIG. 30 depicts a flowchart of the edge smooth software program, further illustrating the function of the software. As can be seen from FIG. 30, the image is loaded in step 40 and magnified in step 41. The software then views each pixel in the image in step 42 and determines if the pixel is in a corner in step 43. If a pixel is not in a corner, the software discards the pixel and then views the next pixel in step 44. If the pixel is in a corner, the software determines the type of orientation of the corner that the pixel is in step 45, i.e., whether the pixel is in an upper-left corner, a lower-left corner, an upper-right corner or a lower-right corner. Next, depending upon the position and shape of the corner, the software fixes the routine for the corresponding corner orientation in steps, 45a, 45b, 45c and 45d, respectively, by adding variable size fill-in patterns of pixels to enhance the corners so as to smooth the edges of the corners. The software repeats this procedure if the pixel is not the last one in the image in step 46, thereby assuring that all of the corners in the image are enhanced. When the last pixel is received by the software and completes the foregoing program, the software stores the image in step 47 and the program ends in step 48.

Current US Cross Reference Classification (1):
358/448

CLAIMS:

6. A scanner/printer system for smoothing jaggies in an image to be printed at a higher resolution than that used for scanning, comprising:

means for scanning an original image to obtain an array of image data pixels corresponding to said original image;

means for edge smoothing for examining said array of image data pixels to locate corners therein and the position, orientation and shape of said corners and for adding variable size fill-in patterns of pixels to said corners according to the shape of said corners to smooth said jaggies associated therewith when the edges of the shape are less than a predetermined length; and
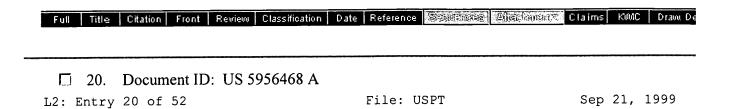
means for printing said array of image data pixels with said added variable size fill-in pattern of pixels.

18. A method for smoothing jaggies in an image to be printed utilizing a scanner/printer system wherein printing is at a higher resolution than scanning, comprising:

scanning an original image to obtain an array of image data pixels corresponding to said original image;

using means for edge smoothing to examine said array of image data pixels to locate corners therein and the position, orientation and shape of said corners and to add variable size fill-in patterns of pixels to said corners according to said position, orientation and shape thereof when the edges of said shape are less than a predetermined length to smooth said jaggies associated therewith; and

printing said array of image data pixels with said added variable size fill-in patterns of pixels.

h   e b   b g ee e f   e   b   ef   b   e

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KWIC | Draw De |

☐ 20.   Document ID: US 5956468 A

L2: Entry 20 of 52   File: USPT   Sep 21, 1999

DOCUMENT-IDENTIFIER: US 5956468 A
** See image for **Certificate of Correction** **
TITLE: Document segmentation system

Detailed Description Text (18):
Also, in conjunction with such document resolutions, documents are sometimes said
to be divided into two dimensional arrays of pixels, each represented by a digital
word. The arrays are taken to be a particular size but one skilled in the art will
recognized the techniques described herein are applicable to various sizes and
shapes of arrays.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KWIC | Draw De |

☐ 21.   Document ID: US 5946103 A

L2: Entry 21 of 52   File: USPT   Aug 31, 1999

DOCUMENT-IDENTIFIER: US 5946103 A
TITLE: Halftone patterns for trusted printing

Detailed Description Text (34):
Various sizes and shapes of human readable patterns have been constructed, and it
has been found that the smaller ones usually are easier to read, because the field
of view through a loupe or magnifying glass is often limited. Subjects given the
images for the first time benefit from seeing as large an area as possible. Asking
the subjects to spell out the individual letters as they see them is also helpful.
When subjects are given images and a loupe and merely asked to find the hidden
message in the background halftone, the problem usually encountered is that the
subject does not know at what scale to look for the embedded words. However, if
given a hint in the form of a blown-up image with a sample message that has been
highlighted, the learning time is greatly reduced. Once the observer learns what to
look for, the task of reading the data becomes easy.

Current US Original Classification (1):
358/3.28

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequence | Attachments | Claims | KWIC | Draw De |

h   e h   h g e e e f   e   b   ef   b   e

□ 22.   Document ID: US 5787195 A

L2: Entry 22 of 52   File: USPT   Jul 28, 1998

DOCUMENT-IDENTIFIER: US 5787195 A
** See image for Certificate of Correction **
TITLE: Precise discrimination of image type

Detailed Description Text (112):
The shape and the size of the reference matrix are the same as those according to
the first embodiment shown in FIG. 8. Also, the structure of the hardware for
obtaining the maximum value and the minimum value is the same as that according to
the first embodiment.

Current US Cross Reference Classification (2):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

□ 23.   Document ID: US 5751920 A

L2: Entry 23 of 52   File: USPT   May 12, 1998

DOCUMENT-IDENTIFIER: US 5751920 A
TITLE: System and method for adapting the thresholds of a dither matrix to the
amplitude of an input signal

Detailed Description Text (6):
The adaptive signal is used to force the output binary representation signal to
have an average intensity value near the average intensity value of the reference
image signal for the local areas 24 of the continuous toned image signal. The image
adaptor 28 divides the reference image signal into local areas 24, according to the
local area size control signal. These local areas are the same size and shape as
the local areas 24 of the dither matrix 22, or matrices. Note that the dither
matrix 22, or matrices, are replicated across the continuous toned input image.
Thus, if the dither matrix 22, or matrices, are divided into local areas 24 four
cells 25 by four cells 25, then the reference image is divided into local areas
that are four elements by four elements. There will be sixteen local areas for each
replication of the dither matrix, or matrices, across the continuous toned input
image.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

□ 24.   Document ID: US 5732162 A

h   c b   b g cc c f   e   b   ef   b   e

L2: Entry 24 of 52   File: USPT   Mar 24, 1998

DOCUMENT-IDENTIFIER: US 5732162 A
TITLE: Two dimensional linearity and registration error correction in a hyperacuity
printer

Detailed Description Text (108):
The information stored in memory 190 of FIG. 27 must also be precalculated before
printing a page. In general, for each defined intensity 197 input to the memory, a
corresponding halftone dot must be defined and stored in memory planes 206 or 207,
for example. Once the shape and size of the halftone dot is defined with respect to
the size of the memory array, each dot needs to be scaled, thereby defining it in
the fastscan direction as number of SYSCLKs, and the slowscan direction as number
of levels. Finally, each halftone dot has to be rendered such that each memory
location defining the halftone dot is assigned a value corresponding to the
intensity of the signal being written by the laser diode.

Current US Cross Reference Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sentences | Attachments | Claims | KWIC | Draw De |

☐ 25.   Document ID: US 5689343 A

L2: Entry 25 of 52   File: USPT   Nov 18, 1997

DOCUMENT-IDENTIFIER: US 5689343 A
TITLE: Area mapping employing reference clusters for high quality noninteger
resolution conversion with enhancement

Current US Cross Reference Classification (3):
358/448

CLAIMS:

8. The method of claim 1, wherein the first resolution is 240.times.240 spi and the
second resolution is 600.times.600 spi, and where a 2.times.2 array of input image
signals are converted to a corresponding 5.times.5 array of output image signals,
and where the first reference signal is determined by the image signal contained in
a first quadrant of the 2.times.2 array of input image signals, further including
the steps of:

defining second, third and forth clusters of output pixel positions, wherein the
second, third and forth clusters, in combination with the first cluster, comprise a
set of pixel positions having a size and shape encompassing all the pixels in the
output array;

identifying second, third and forth reference values equal to an input image signal
level stored in the second, third and forth quadrants of the 2.times.2 array of
input image signals, respectively;

setting the image signal level of the second cluster of output pixels to the second

h   e b   b g e e e f   c   b   ef   b   e

reference value;

setting the image signal level of the third cluster of output pixels to the third
reference value;

setting the image signal level of the fourth cluster of output pixels to the fourth
reference value;

comparing image signals of a set of first dimension pixel positions within a window
encompassing the 2.times.2 array of input image pixel positions to a template-based
filter to identify a match; and

modifying, only in response to a template filter match, the image signal level of
at least one of the output image signals.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De

---

   □ 26. Document ID: US 5684932 A

L2: Entry 26 of 52   File: USPT   Nov 4, 1997

DOCUMENT-IDENTIFIER: US 5684932 A
** See image for Certificate of Correction **
TITLE: Method and apparatus for dither array generation to reduce artifacts in
halftoned image data utilizing ink reduction processing

Brief Summary Text (31):
The algorithm used in recursive tessellation for generating the threshold array is
based on the fact that if a regular geometric shape or "tile" is used cover or
tessellate the two-dimensional dither array, the center point of the shape and its
vertices can serve as center points for a retessellation of the array with new
tiles of the same geometric shape but sized one cell smaller. In turn, the center
points and vertices of these new tiles can act as center points for another
retessellation with tiles that are again one cell smaller.

Current US Original Classification (1):
358/1.9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De

---

   □ 27. Document ID: US 5627580 A

L2: Entry 27 of 52   File: USPT   May 6, 1997

DOCUMENT-IDENTIFIER: US 5627580 A
TITLE: System and method for enhanced printing

h   e b   b g ee e ſ   e   b   cf   b   e

Detailed Description Text (54):
Obviously, the advantages of the above methods could be combined to accomplish the even more powerful feature set of both horizontal and vertical resolution enhancement with gray scale imaging. An array that can accomplish timing delay (vertical offset), variable pixel sizes, shapes and grid locations and horizontal offset, is shown in FIG. 6.

Current US Cross Reference Classification (4):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 28.   Document ID: US 5625755 A

L2: Entry 28 of 52   File: USPT   Apr 29, 1997

DOCUMENT-IDENTIFIER: US 5625755 A
** See image for Certificate of Correction **
TITLE: Method and apparatus for tonal correction in binary printing devices by predistortion of image data utilizing ink reduction processing

Brief Summary Text (31):
The algorithm used in recursive tessellation for generating the threshold array is based on the fact that if a regular geometric shape or "tile" is used cover or tessellate the two-dimensional dither array, the center point of the shape and its vertices can serve as center points for a retessellation of the array with new tiles of the same geometric shape but sized one cell smaller. In turn, the center points and vertices of these new tiles can act as center points for another retessellation with tiles that are again one cell smaller.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 29.   Document ID: US 5592592 A

L2: Entry 29 of 52   File: USPT   Jan 7, 1997

DOCUMENT-IDENTIFIER: US 5592592 A
** See image for Certificate of Correction **
TITLE: Method and apparatus for minimizing artifacts in images produced by error diffusion halftoning utilizing ink reduction processing

Brief Summary Text (31):
The algorithm used in recursive tessellation for generating the threshold array is based on the fact that if a regular geometric shape or "tile" is used cover or tessellate the two-dimensional dither array, the center point of the shape and its vertices can serve as center points for a retessellation of the array with new

h   e b   b g ee e f   e   b   cf   b   e

tiles of the same geometric shape but sized one cell smaller. In turn, the center points and vertices of these new tiles can act as center points for another retessellation with tiles that are again one cell smaller.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachment | Claims | KWIC | Draw 'De |

☐ 30.   Document ID: US 5572605 A

L2: Entry 30 of 52   File: USPT   Nov 5, 1996

DOCUMENT-IDENTIFIER: US 5572605 A
TITLE: Apparatus and method for inputting, compressing and outputting characters, illustrations, drawings and logomarks

Brief Summary Text (5):
On the contrary, drawings, illustrations or logomarks are assemblies of figures or patterns of arbitrary shapes or sizes. Some drawings are expressed in three-dimension space. However, this invention confines the scope of drawings to two-dimensional ones. Original drawings have been drafted on a paper. The original drawings are kept in a document file. If someone wants to reproduce a drawing, its original drawing must be photocopied by a copy machine. Enlargement or reduction will be done optically by enlarging photocopy or reducing photocopy.

Current US Cross Reference Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachment | Claims | KWIC | Draw De |

☐ 31.   Document ID: US 5557709 A

L2: Entry 31 of 52   File: USPT   Sep 17, 1996

DOCUMENT-IDENTIFIER: US 5557709 A
TITLE: Method and apparatus for dither array generation to reduce artifacts in halftoned images

Brief Summary Text (18):
The algorithm used in recursive tessellation for generating the threshold array is based on the fact that if a regular geometric shape or "tile" is used cover or tesselate the two-dimensional dither array, the center point of the shape and its vertices can serve as center points for a retesselation of the array with new tiles of the same geometric shape but sized one cell smaller. In turn, the center points and vertices of these new tiles can act as center points for another retesselation with tiles that are again one cell smaller.

Current US Original Classification (1):

h   e b   b g ee e f   e   b   ef   b   c

358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 32. Document ID: US 5553200 A

L2: Entry 32 of 52   File: USPT   Sep 3, 1996

DOCUMENT-IDENTIFIER: US 5553200 A
TITLE: Method and apparatus for providing bit-rate reduction and reconstruction of
image data using dither arrays

Detailed Description Text (58):
The invention may be practiced with LUT memories larger than 64K bytes, or with
threshold arrays of any shape or size, without departing from the spirit or scope
of the invention.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 33. Document ID: US 5548407 A

L2: Entry 33 of 52   File: USPT   Aug 20, 1996

DOCUMENT-IDENTIFIER: US 5548407 A
TITLE: Process for electronic processing of multi-colored continuous-tone images

Brief Summary Text (3):
The invention relates to a process for electronic processing of multicolored
continuous-tone (contone) images, during which process the original, divided in the
shape of an orthogonal screen of areal scan elements, is scanned line by line or
column by column; the brightness of the individual scan elements is determined and
converted into digital tone values, the brightness being based on the respective
color separations; a screened reproduction of the original that is divided into
square recording fields of expediently identical size is obtained by printing a
number of dots, which correspond to the respective tone value, exhibit identical
color density, and are set on the individual areal recording elements of the
respective recording field; each recording field is divided into square tiles of
expediently identical size with a specific number of recording elements; the number
of tone levels that can be differentiated within a tile is specified by the number
of recording elements contained in a tile; distributions (dot pattern) of the dots
corresponding numerically to the tone levels are assigned to the individual tone
levels within the tile, distributions being defined within the tile and determined
prior to the completion of screening and held available in a data memory (as bit
maps); and the specific dot patterns are obtained, starting from fixed basic dot
patterns, by adding or subtracting dots.

h   e b   b g ee e f   e   b   ef   b   e

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 34. Document ID: US 5537516 A

L2: Entry 34 of 52   File: USPT   Jul 16, 1996

DOCUMENT-IDENTIFIER: US 5537516 A
TITLE: Method for calibrating a color printer using a scanner for color
measurements

Detailed Description Text (73):
When used for calibrating printers in the method of the present invention, the
defocusing embodiment is designed in conjunction with the screen pattern (dot size,
dot shape, screen angle, and screen frequency) of the half-tone patches to enable
practical defocusing with a reasonable value of distance .DELTA.F for a
scanner/printer where the scanner has known focal properties.

Detailed Description Text (75):
It may be that for a particular printer/scanner, even with control of the screen
pattern (dot size and shape, and screen angle and frequency) of the half tone
patches, the defocusing embodiment may not work because that scanner's depth of
field is such that the distance .DELTA.F required to achieve sufficient defocusing
is not practical. In an alternate embodiment of the present invention, a diffusing
substrate rather than defocusing means is placed in between a target comprising a
plurality of single-ink patches and the scanning device. The scanning device for
measuring ink density scans the target to produce a plurality of scan signals. As
with the defocusing embodiment, diffusing the target overcomes prior art
disadvantages of spatial correlation, thereby reducing significantly the undesired
interference patterns.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☑ 35. Document ID: US 5537223 A

L2: Entry 35 of 52   File: USPT   Jul 16, 1996

DOCUMENT-IDENTIFIER: US 5537223 A
TITLE: Rotating non-rotationally symmetrical halftone dots for encoding embedded
data in a hyperacuity printer

Detailed Description Text (107):
For the case where the memory accesses would occur too fast for a physical memory
fetch as mentioned above, the equation for the memory access address in the

h   e b   b g ee e f   e   b   ef   b   e

fastscan direction is multiplied by n where n is the number of MicroCLKs per
SYSCLK, and n simultaneous fetches are made while making the memory data word n
times bigger. Subsequent fetches would then be made on next SYSCLKs, skipping over
n memory locations to the next multi-value fetch. In this case, distance in the
fastscan direction would be measured in MicroCLKs instead of SYSCLKs. Therefore, it
would be necessary to modify equation 1 above to determine the number of memory
locations per MicroCLKs as follows: For example, if eight memory fetches were to be
made in one SYSCLK, the number of SYSCLKs per MicroCLK would be 1/8, or in other
words, there would be 8 MicroCLKs per SYSCLK. ##EQU5## The information stored in
memory 190 of FIG. 27 must also be precalculated before printing a page. In
general, for each defined intensity 197 input to the memory, a corresponding
halftone dot must be defined and stored in memory planes 206 or 207, for example.
Once the shape and size of the halftone dot is defined with respect to the size of
the memory array, each dot needs to be scaled, thereby defining it in the fastscan
direction as number of SYSCLKs, and the slowscan direction as number of levels.
Finally, each halftone dot has to be rendered such that each memory location
defining the halftone dot is assigned a value corresponding to the intensity of the
signal being written by the laser diode.

Current US Original Classification (1):
358/3.28

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 36.   Document ID: US 5515480 A

L2: Entry 36 of 52   File: USPT   May 7, 1996

DOCUMENT-IDENTIFIER: US 5515480 A
TITLE: System and method for enhancing graphic features produced by marking engines

Abstract Text (1):
Gray scale input data, derived from continuous tone data, is transformed into pulse
patterns for driving a marking engine so that a variety of marks of different sizes
and shapes are formed in any given pixel region. Gray scale input data is arranged
(received) as an array of pixels, in the native engine resolution, including multi-
bit per pixel gray level values. A pixel in the array is analyzed in a
transformation (window) to determine the pulse pattern output based on the gray
level value of the current pixel and on the gray level values of adjacent vertical
and horizontal pixels. The pulse pattern output for driving the marking engine in
the current pixel location is adjusted by the transformation to produce sub-pixel
sized marks of various shapes, sizes, positions, and orientations that, in
combination with neighboring marks so produced, provides for the flexible
production of marking patterns that contain a number of gray scale levels
substantially exceeding the number of gray scale levels contained in the input
data, and that enhance the simulation of graphic features produced. The
transformation flexibly selects from an optimized subset of pulse patterns
available to produce the most accurately calibrated tones and features based on the
input data. Hence, gray scale input data is transformed into a pulse pattern output
for driving a marking engine.

Brief Summary Text (21):
Accordingly, the present invention provides a significant increase in the ability
of a monotone output device, such as a laser printer or similar marking engine, to
produce high quality gray scale, halftone, or shaded images while enhancing graphic

h   e b   b g ee e f   e   b   cf   b   e

features. This is accomplished by transforming <u>patterns</u> detected in multi-bit per pixel gray scale input data, arranged in the native resolution of the marking engine, into relatively precise driving pulses, or marking pulse <u>patterns</u> causing the marking engine to responsively make marks of various <u>sizes, shapes,</u> and positions in a pixel region of an output image. The pulses, or pulse patterns, are generated at intervals with a predetermined granularity; that is, at intervals which are a given fractional duration of the period needed to produce a mark in the entire pixel region. The pulses are also provided in various positions within a pixel marking period. This produces various marks which may be smaller than the size of a nominal pixel region, larger than the size of a nominal pixel region, located in different areas of a pixel region, or overlapped in regions between nominal pixel regions.

<u>Brief Summary Text</u> (31):
Accordingly, in one broad aspect an enhancement system accepts gray scale source data as input and transforms it into optimized pulses for driving a monotone marking engine to simulate graphic features encoded in the source data. The enhancement circuit provides the marking engine with the ability to produce high quality halftone images that it would otherwise not be able to produce from the gray scale source data. The enhancement circuit uses gray value information from a plurality of pixels in a feature detection window in order to generate a precisely controlled pulse pattern for each pixel in the image. Condition selection decoding circuitry detects gray value patterns in the feature detection window and generates an address value that corresponds to the given window pattern. A combination of logic and a look-up table is used to convert, transform, or map each window pattern from the feature detection window into an optimized pulse output pattern for driving the marking engine. The optimized pulse output <u>patterns</u> provide the marking engine with the ability to produce optimized marks or mark clusters that include marks of various <u>sizes, shapes,</u> and configurations, many of which would not be producible without the use of the enhancement circuitry. Thus, the principles of the present method and system provide for the enhanced productions of graphic features, including halftone, text, or other graphic features, by a marking engine.

<u>Detailed Description Text</u> (13):
The effect of the charges is additive in the overlapping regions. This additive property is exploited by the present enhancement system 20 to create small, precisely formed marks in each pixel region 99 by pulse controlling the laser in neighboring pixel locations using relatively short pulse durations. The <u>size and shape</u> of the halftone marks 98 in halftone cells 92 are "grown", or provided, by controlling the position and duration of energizing pulses in one pixel location at a time, using gray level information from surrounding pixels to fine-tune the energizing pulse <u>patterns</u>. The resulting growth of contiguous halftone marks 98 in halftone cells 92 provides for high quality gray scale image production by the monotone marking engine 22.

<u>Current US Original Classification</u> (1):
358/1.9

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De

----

☐ 37.   Document ID: US 5485289 A

L2: Entry 37 of 52   File: USPT   Jan 16, 1996

DOCUMENT-IDENTIFIER: US 5485289 A

h   e b   b g e e e ſ   e   b   ef   b   e

TITLE: Hyperacuity printer architecture

Detailed Description Text (108):
The information stored in memory 190 of FIG. 27 must also be precalculated before printing a page. In general, for each defined intensity 197 input to the memory, a corresponding halftone dot must be defined and stored in memory planes 206 or 207, for example. Once the shape and size of the halftone dot is defined with respect to the size of the memory array, each dot needs to be scaled, thereby defining it in the fastscan direction as number of SYSCLKs, and the slowscan direction as number of levels. Finally, each halftone dot has to be rendered such that each memory location defining the halftone dot is assigned a value corresponding to the intensity of the signal being written by the laser diode.

Current US Original Classification (1):
358/2.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |

☐ 38. Document ID: US 5432619 A

L2: Entry 38 of 52   File: USPT   Jul 11, 1995

DOCUMENT-IDENTIFIER: US 5432619 A
TITLE: Labeling method and apparatus thereof

Detailed Description Text (27):
The intention of the foregoing processing will now be explained concretely. When detecting spots through raster scanning from the upper left to the lower right, the scanning begins with state (b) and terminates in state (i). Various kinds of patterns may be possible between the states (b) and (i) depending on a shape and size of the spot. In the simplest case where the spot consists of only one image, the pattern changes (b).fwdarw.(c).fwdarw.(e).fwdarw.(i). When it reaches the state (e), X="0" and therefore the first content "1" of the label counter LC becomes the temporary label R in accordance with the case (1) of f(RLB) described earlier. The content of the label counter LC is increased to "2". When reaching the state (i), R="1" is written in the corresponding address for the target image (i,j) in the frame memory WFM.

Current US Original Classification (1):
358/448

Current US Cross Reference Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De |

☐ 39. Document ID: US 5367613 A

L2: Entry 39 of 52   File: USPT   Nov 22, 1994

h   e b   b g̈ e e e f   e   b   ef   b   e

DOCUMENT-IDENTIFIER: US 5367613 A
TITLE: Abstract pattern plate making system and printed matter printed thereby

Abstract Text (1):
An abstract pattern plate making system comprising a grain pattern generator for
generating grain patterns free of unintended repetitive patterns. When an image
size, a grain count, maximum displacement amounts and a grain shape are input, the
grain pattern generator generates the basic addresses of the designated number of
grains in such a manner that the grains occur at equal and uniform intervals in the
designated image size and that the number of grains per unit area remains constant.
The address of each grain is then displaced relative to its basic address with the
designated maximum amounts of displacement. The designated grain shape is assigned
to each of the displaced addresses so as to generate a grain pattern. If the
address of any grain protrudes out of the designated image size, the grain pattern
generator transfers the protruding pixel to a location opposite to the protruding
side so as to keep the grain within the designated size.

Detailed Description Text (26):
After the address of each pixel is calculated in step S6, the grain pattern
generator 10 goes to step S7. In step S7, the grain pattern generator 10 corrects
the location of a pixel that has protruded out of its allowed image size as
follows: Suppose for descriptive purposes that the grain shape of FIG. 4A is used.
A pixel whose basic address was within the designated image size (at P.sub.1 in
FIG. 6) can protrude out of the image size (i.e., at P.sub.2) as a result of adding
a displacement address to the basic address. In that case, one option would be to
ignore the pixel that protruded. With this embodiment, however, the protruding
pixel is transferred to a location indicated P.sub.2 ' in FIG. 6, i.e., opposite to
the protruding side. That is, the address of the protruding pixel is corrected so
as to keep the pixel within its allowed image size. Although the example of FIG. 6
shows the pixel protruding in the X direction, the same scheme applies to cases
where pixels protrude in the Y direction. This simply means that the address of the
pixel is counted continuously for movement from one end of the image size to the
other in the traverse or longitudinal direction. This makes it possible to generate
an endless sand grain pattern.

Current US Original Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 40.   Document ID: US 5175804 A

L2: Entry 40 of 52   File: USPT   Dec 29, 1992

DOCUMENT-IDENTIFIER: US 5175804 A
** See image for Certificate of Correction **
TITLE: System and method for color image reproduction from color separations
prepared from random fixed size dot placement

Brief Summary Text (13):
The exact shape, size and spacing between the dots can change, but a fixed pattern
of dots, aligned between layers of different colors is used by virtually all color
separation and computer generated images that are currently in commercial usage.

h   e b   b g ee e f   e   b   cf   b   e

Current US Cross Reference Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

☐ 41.   Document ID: US 5175635 A

L2: Entry 41 of 52   File: USPT   Dec 29, 1992

DOCUMENT-IDENTIFIER: US 5175635 A
TITLE: Picture printing apparatus using multivalued patterns, binary patterns and
dither patterns selectively

Brief Summary Text (11):
For example, as shown in FIGS. 3 and 4, the low concentration fixed pattern "A" is
an isolated dot pattern formed by isolating one dot in a picture element, and the
gradations in the low concentration area are expressed by modulating the printing
energy (energy supplied to the thermal head) and changing the dot size. The medium
concentration fixed pattern "B" is a stripe shaped pattern extending in the
relative transfer direction (subscanning direction) between the thermal head and
printing paper, and the gradations in the medium concentration area are expressed
by changing the stripe width by the energy supplied to the thermal head.
Furthermore, the high concentration fixed pattern "C" is an L-shaped pattern
combined with a white section of dimension 2.times.2, and the gradations of high
concentration are expressed by changing the size of the white section in proportion
to the remaining portion of the L-shaped dot pattern.

Current US Original Classification (1):
358/2.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

☐ 42.   Document ID: US 5166809 A

L2: Entry 42 of 52   File: USPT   Nov 24, 1992

DOCUMENT-IDENTIFIER: US 5166809 A
TITLE: Apparatus and methods for digital halftoning

Brief Summary Text (9):
Advances in the fields of digital electronics and optical scanning have led to
numerous attempts to develop digital imaging systems for four color halftone
processing. Basically, in digital signal processing systems for producing halftone
color separations, the image to be reproduced is scanned with an optical scanner to
generate digitized signals representative of the color contained in small
incremental regions ("pixels") of the image being processed. The digitized color
representative signals are then processed to generate digitally encoded signals
that are representative of the cyan, yellow, magenta and black components for each

h   e b   b g ee e f   e   b   cf   b   e

of the image pixels. Further processing of the digitally encoded signals is performed to establish a set or <u>array</u> of digitally encoded signals that establish the position, <u>size and shape</u> of the halftone dots that are produced when the data is coupled to a conventional digital output device such as a laser printer or a similar digital output device (e.g., a conventional device that is known as a laser image setter).

<u>Current US Original Classification</u> (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 43.   Document ID: US 5093872 A

L2: Entry 43 of 52   File: USPT   Mar 3, 1992

DOCUMENT-IDENTIFIER: US 5093872 A
TITLE: Electronic image compression method and apparatus using interlocking digitate geometric sub-areas to improve the quality of reconstructed images

<u>Brief Summary Text</u> (16):
It has further been discovered that at least one specific <u>shape and size</u> of sub-area applied to a specific <u>size and shape</u> image PEL <u>array</u> is so effective that high quality images can be provided using only two of the three common modes of coding blocks: solid tone, and bi-tone. This eliminates the data intensive PEL-by-PEL coding further aiding compression.

<u>Current US Cross Reference Classification</u> (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 44.   Document ID: US 4903147 A

L2: Entry 44 of 52   File: USPT   Feb 20, 1990

DOCUMENT-IDENTIFIER: US 4903147 A
TITLE: Method and apparatus for processing an image

<u>Detailed Description Text</u> (7):
The size of the recurrent screen dot pattern stored in the memory 1031 is determined as follows. With reference to FIG. 2 showing the case of a screen dot area percentage of 50%, small dark squares correspond to black areas of screen dots and small white squares correspond to white areas of screen dots. The gradient of a series of black dots is called a screen dot angle equal to an integer "b" divided by an integer "a". The point O is defined as being distant from the center P of a given screen dot by an interval corresponding to the integer "a" along the series of the screen dots. As understood from FIG. 2, the point O coincides with the center of a screen dot. The point Q is defined as being distant from the point O by

h   e b   b g ᴇ ᴇ ᴇ ſ   ᴄ   b   ef   b   ᴇ

an interval corresponding to the integer "b" along another series of screen dots
extending perpendicular to the line OP. As understood from FIG. 2, the point Q also
coincides with the center of a screen dot. Accordingly, it can be thought that the
central point P of a screen dot appears again at the point Q distant from the
original point P in the horizontal direction X, and that there are periodical or
recurrent patterns with a period Td. Similarly, it can be seen that, in the
vertical direction Y, there are periodical or recurrent patterns with a period Td
equal to the period in the horizontal direction X. Accordingly, the four-cornered
shape PQRS is a square with sides whose size equal to the value Td. The value Td is
given as: ##EQU1##

Current US Original Classification (1):
358/448

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

---

45.   Document ID: US 4786975 A

L2: Entry 45 of 52   File: USPT   Nov 22, 1988

DOCUMENT-IDENTIFIER: US 4786975 A
TITLE: Method for coding facsimiles

Brief Summary Text (3):
FIG. 1 shows a section enlarged about seven times from the facsimile of a bicolor
halftone image that appeared in a daily newspaper. Visible therein is a rectangular
pattern of black dots of different size and shape which is inclined by about
45.degree. relative to the page edges. The black dots bleed into one another in
dark regions and are in turn composed of an accumulation of quadratic solid areas
which correspond to the facsimile scan spots. In the original, the center-to-center
spacing of two halftone screening spots (a) amounts to 0.4 mm and the center-to-
center spacing of two scan spots amounts to 0.075 mm.

Current US Original Classification (1):
358/2.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

---

46.   Document ID: US 4783841 A

L2: Entry 46 of 52   File: USPT   Nov 8, 1988

DOCUMENT-IDENTIFIER: US 4783841 A
TITLE: Data compression

Brief Summary Text (43):
The pattern coding relates to the number of some shape/pattern in a library of such
patterns, and there is a different library for each level or size of block. Thus
preferably the equipment needs to be able to access the correct library for the

h   e b   b g ɛ ɛ ɛ f   ɛ   b   ef   b   ɛ

level presently being examined. The libraries at the different levels may well
contain have different numbers of patterns. Thus, the 32 level library might have
64 patterns, the 16 level library 32 patterns, and the 8 and 4 levels libraries
about 500 each. The pattern identifying code may be coded explicitly so that the
pattern identifying code field can vary in length from level to level. The largest
number of bits needed to define the 64 numbers 0 to 63 is 5 while the largest
number of bits needed to define the 512 numbers 0 to 511 is 8. Alternatively, the
pattern identifying code may itself be encoded so as on average to take up less
space. One useable coding system is that known as a Huffman code, in which the
further encoding is done on the basis of the frequency with which the material to
be encoded is likely to turn up, the shortest Huffman codes being allocated to the
most common item. Morse Code is an example of this principle, in that the most
common letters hvve the shortest codes. E is the most common letter in English and
is represented by a dot in Morse. The maximum length of a Huffman code in any
system depends upon the number of items to be coded and their frequencies. On
average, however, if there are n items then the longest Huffman code will require
no more than 2log.sub.2 n bits. Of course, if a Huffman coding system is employed,
or indeed, any coding system that allows the pattern field length to be variable
within levels, then the equipment will need to be able to recognise, once a match
has been found, that the following bits are the contents of the next following
field.

Current US Cross Reference Classification (1):
358/1.9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 47.   Document ID: US 4633327 A

L2: Entry 47 of 52   File: USPT   Dec 30, 1986

DOCUMENT-IDENTIFIER: US 4633327 A
TITLE: Enhancement halftoning

Brief Summary Text (5):
In the usual method, the threshold is a fixed value and adjustment of the screen
pattern (including so-called bump and flash exposures in the photographic case) is
used to adjust the effective grey scale of the halftone as desired. This process
results in dots of varying size, shape, and location within their repetitive
pattern. In the digital case, each sample of the halftone screen and corresponding
sample of the pictorial information are combined and result in one bit, which is
then printed either black or white at a given location. Since there are a number of
samples within each cycle of the halftone screen, several adjacent bits normally
combine to give the effect of a single halftone dot with size, shape, and location
depending on the pattern of bits.

Detailed Description Text (2):
The signal from the add block is then conveyed to an adjustable threshold circuit.
Usually, the threshold is a fixed value and adjustment of the screen pattern is
used to adjust the effective grey scale of the halftone as desired. In the digital
case, each sample of the halftone screen and corresponding sample of the pictorial
information are combined to provide one bit. This bit is printed either black or
white at a given location. Since there are a number of samples within each cycle of
the halftone screen, several adjacent bits normally combine to give the effect of a
single halftone dot with size, shape and location depending on the pattern of bits.

h   e b   b g e e e f   e   b   ef   b   e

Current US Original Classification (1):
358/2.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 48.   Document ID: US 4591904 A

L2: Entry 48 of 52   File: USPT   May 27, 1986

DOCUMENT-IDENTIFIER: US 4591904 A
TITLE: Picture image input/output system

Detailed Description Text (18):
The position, shape and size of the picture to be laid out as an output on the
color paper 31 mounted on the output drum 30 as a rough sketch are inputted by the
digitizer 20, thereby defining the pattern on the coordinate system (the rough
sketch coordinate system) which defines the rough sketch, and the thus defined
graphic patterns are respectively supervised.

Current US Cross Reference Classification (1):
358/448

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 49.   Document ID: US 4261018 A

L2: Entry 49 of 52   File: USPT   Apr 7, 1981

DOCUMENT-IDENTIFIER: US 4261018 A
TITLE: Progressive image transmission

Current US Cross Reference Classification (2):
358/1.9

CLAIMS:

2. The image transmission system defined in claim 1 further characterized in that

said processor (13) further encodes numerically said basic image areas of uniform
size and shape according to the distribution pattern of picture elements of one
kind therein.

7. The image transmission system defined in claim 6 further characterized in that

processor (17) decodes picture-element groups of uniform size and shape according
to a permutational pattern of binary values in each cell and reconstructs in a
final progression the individual binary value of each picture element of an

h   e b   b g ɛ ɛ ɛ f   e   b   ef   h   e

original image.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 50.   Document ID: US 4259694 A

L2: Entry 50 of 52   File: USPT   Mar 31, 1981

DOCUMENT-IDENTIFIER: US 4259694 A
** See image for **Certificate of Correction** **
TITLE: Electronic rescreen technique for halftone pictures

Brief Summary Text (3):
A more difficult problem occurs where the original itself is a halftone
representation, rather than a photograph or equivalent. The production of a
halftone copy from a halftone original usually results in a degraded copy since the
original screen generates a large amount of non-informational content which,
consequently, reacts with the copying process to produce Moire patterns, irregular
shape and size of dots and a loss of texture and gray scale.

Current US Cross Reference Classification (1):
358/448

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Term	Documents
SHAP$3	0
SHAP	384
SHAPA	9
SHAPABI	2
SHAPAD	5
SHAPAE	3
SHAPAED	7
SHAPAES	2
SHAPAEV	7
SHAPAK	2
SHAPAL	9
(L1 AND (SHAP$3 WITH SIZ$3 WITH (PATTERN$3 OR MATRI$3 OR	52

h   c b   b g c c c f   e   b   ef   h   e

ARRAY$3))).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.

There are more results than shown above. Click here to view the entire set.

Display Format: [-] [**Change Format**]

Previous Page   Next Page   Go to Doc#

Hit List

Search Results - Record(s) 51 through 52 of 52 returned.

☐ 51. Document ID: JP 02167593 A

Using default format because multiple data bases are involved.

L2: Entry 51 of 52   File: JPAB   Jun 27, 1990

```
PUB-NO: JP402167593A
DOCUMENT-IDENTIFIER: JP 02167593 A
TITLE: GENERATING METHOD FOR VOID CHARACTER

PUBN-DATE: June 27, 1990

INVENTOR-INFORMATION:
NAME                                              COUNTRY
FUJII, KATSUYASU

US-CL-CURRENT: 345/FOR.149; 358/1.11, 358/1.15, 358/448, 400/63
INT-CL (IPC): G09G 5/28; B41J 2/485; G06F 3/12
```

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 52. Document ID: JP 59224976 A

L2: Entry 52 of 52   File: JPAB   Dec 17, 1984

```
DOCUMENT-IDENTIFIER: JP 59224976 A
TITLE: PHOTOTELEGRAPHY EQUIPMENT
```

Abstract Text (2):
CONSTITUTION: A mask pattern generating circuit 1 outputs a mask pattern data P
having a designated shape, position and size. An address generating circuit 2
receiving the data P outputs an address data M specifying plural cross points
between a scanning line and the mask pattern data respectively by means of a
picture element bit from the scanning start point. A trimming generating circuit 5
receiving the data M outputs a trimming signal G and applies it to a gate circuit
6. Since a picture signal D from storage circuits 3-1, 3-2 storing the picture
signal D at each scanning line on the other hand, a trimming picture signal H is
outputted from a gate circuit 6. The trimming processing is attained by using the
mask pattern designated at the same time with the scanning of the normal original
picture in this way.

Current US Cross Reference Classification (1):

h   e b   b cg b   cc   c

358/448

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Term	Documents
SHAP$3	0
SHAP	384
SHAPA	9
SHAPABI	2
SHAPAD	5
SHAPAE	3
SHAPAED	7
SHAPAES	2
SHAPAEV	7
SHAPAK	2
SHAPAL	9
(L1 AND (SHAP$3 WITH SIZ$3 WITH (PATTERN$3 OR MATRI$3 OR ARRAY$3))).PGPB,USPT,EPAB,JPAB,DWPI,TDBD.	52

There are more results than shown above. Click here to view the entire set.

Display Format: |- | Change Format |

Previous Page   Next Page   Go to Doc#

h   e b   b cg b   cc   e